

AMENDMENTS TO THE CLAIMS

The claims in this listing will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A tool exchange device, comprising:

a tool, comprising first and second step portions with an L-shaped section formed in an L-shape and having vertical restriction surfaces diametrically opposing and parallel to each other and horizontal engagement surfaces directed radially outwardly from the lower ends of the vertical restriction surfaces on both two sides of a main body portion of [[a]] the tool;

a first engagement member provided on one side of a holding portion that places and holds [[a]] the tool for exchange, the first engagement member having a first engagement projection piece opposing the a horizontal engagement surface of one of the first step portions portion and having its an end surface in abutment against the a vertical restriction surface of the first step portion;

a second engagement member provided on the other another side of the holding portion, the second engagement member having a second engagement projection piece having its an intermediate part opposed to the a horizontal engagement surface of the other of the second step portions portion, and having its end surfaces formed on both sides of the intermediate part in abutment against the outer periphery portions of the main body portion formed on both sides of the second step portion; and

a moving unit which moves the first and second engagement members between an engagement position and a withdrawal position with respect to the step portions.

2. (Currently Amended) ~~The tool exchange device according to claim 1,~~

A tool exchange device, comprising:

a tool, comprising first and second step portions formed in an L-shape and having vertical restriction surfaces diametrically opposing and parallel to each other and horizontal engagement surfaces directed radially outwardly from lower ends of the vertical restriction surfaces on two sides of a main body portion of the tool;

a first engagement member provided on one side of a holding portion that places and holds the tool for exchange, the first engagement member having a first engagement projection piece opposing a horizontal engagement surface of the first step portion and having an end surface in abutment against a vertical restriction surface of the first step portion;

a second engagement member provided on another side of the holding portion, the second engagement member having a second engagement projection piece having an intermediate part opposed to a horizontal engagement surface of the second step portion, and having its end surfaces formed on sides of the intermediate part in abutment against portions of the main body portion formed on sides of the second step portion; and

a moving unit which moves the first and second engagement members between an engagement position and a withdrawal position with respect to the step portions,

wherein the moving unit includes:

a moving guide that movably supports the first and second engagement members between the engagement position and the withdrawal position;

an energizing unit that energizes the first and second engagement members to move toward the engagement position;

wedge members engageable with engagement rollers provided at the first and second engagement members; and

a moving unit for the wedge members, wherein ~~the an~~ energizing force ~~by of~~ the energizing unit for the first engagement member is set greater than ~~the an~~ energizing force ~~by of~~ the energizing unit for the second engagement member.

3. (Cancelled)

4. (New) The tool exchange device according to claim 1, wherein the end surfaces of the second engagement member formed on the sides of the intermediate part are shaped as an arc.

5. (New) The tool exchange device according to claim 2, wherein the end surfaces of the second engagement member formed on the sides of the intermediate part are shaped as an arc.

6. (New) A tool exchange device for holding a tool for exchange, the tool comprising first and second step portions formed on two sides of a main body portion of the tool, the tool exchange device comprising:

a holding portion;

a first engagement member provided on one side of the holding portion that places and holds the tool for exchange, the first engagement member having a first engagement projection piece opposing a horizontal engagement surface of the first step portion and having an end surface in abutment against a vertical restriction surface of the first step portion;

a second engagement member provided on another side of the holding portion, the second engagement member having a second engagement projection piece having an intermediate part opposed to a horizontal engagement surface of the second step portion, and having end surfaces formed on sides of the intermediate part in abutment against portions of the main body portion formed on sides of the second step portion; and

a moving unit which moves the first and second engagement members between an engagement position and a withdrawal position with respect to the step portions.

7. (New) The tool exchange device according to claim 6, wherein the end surfaces of the second engagement member formed on the sides of the intermediate part are shaped as an arc.